

REMARKS

Claims 1-41 are pending in the application.

Claims 1-16, 37 and 38 are withdrawn from consideration.

Claims 17, 18, 20-23, 25, 26, 28-31, 39 and 40 are rejected.

Claims 19, 24, 27, 32-36 and 41 are objected to.

Claims 17, 18, 20-23, 25, 26, 28-31, 39 and 40 are rejected under 35 U.S.C. 102(b).

No new matter is added.

Claims 17-36 and 39-41 remain in the case for consideration.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

Claim Objections

Claims 24 and 32 are objected to because of the following informalities: it is unclear and confusing if Applicant is trying to claim that both the contact pattern and the contact spacer are made of the same material, namely silicon nitride or polysilicon, or if the contact pattern can be silicon nitride and the contact spacer can be polysilicon.

Claims 24 and 32 have been amended to address the informalities. Claims 24 and 32, as amended, now state in part "... the contact pattern comprises silicon nitride or polysilicon, and the contact spacer comprises silicon nitride or polysilicon." These amendments remove any confusion and state that the contact pattern can be comprised of either material (silicon nitride or polysilicon) independent of which of the two materials comprise the contact spacer. Thus, the materials of the contact pattern and the contact spacer may be the same or may differ.

Claim Rejections – 35 U.S.C. § 102

Claims 17, 18, 20-23, 25, 26, 28-31, 39 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent No. 5,966,610 issued to Wang, et al. ("Wang").

Claim 17 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Wang.

Claim 17 is drawn to a method of manufacturing a semiconductor device. This method comprises:

forming a first insulating film on a semiconductor substrate;
forming wiring on the first insulating film wherein the wiring includes conductive film patterns and second insulating film patterns formed on the conductive film patterns;

forming a third insulating film on the wiring and the first insulating film using a silicon oxide based material;

forming contact patterns on the wiring wherein the contact patterns define contact hole regions;

forming contact spacers on sidewalls of the contact patterns; and

etching the third insulating film and the first insulating film using the contact patterns and the contact spacers as masks to form the contact holes and to simultaneously form third insulating film patterns on sidewalls of the wiring.

In particular, the method of claim 17 includes forming a third insulating film on both the wiring and the first insulating film. Furthermore, the method of claim 17 includes etching the third insulating film and the first insulating film while simultaneously forming third insulating film patterns on sidewalls of the wiring.

Wang, by contrast, teaches neither the forming of the third insulating film on both the wiring and first insulating film, nor the etching of the third and first insulating films while simultaneously forming third insulating film patterns on sidewalls of the wiring. Referring to Figs. 3 and 7 in Wang, Wang teaches forming the third insulating layer (350) on the inter-insulating layer (348 – “2nd insulating layer”), unlike the present invention, which discloses the formation of the third insulating film on the wiring and the first insulating film.

Again referring to Fig. 7 in Wang, Wang teaches etching away the third insulating layer (350) and inter-insulating layer (348 – “2nd insulating layer”). This etching taught by Wang leaves the gate electrode (342 – “wiring”) insulated from the contact window (710) by a section of inter-insulating layer (348 – “2nd insulating layer”). By contrast however, the present invention discloses etching the third insulating film and the first insulating film while simultaneously forming third insulating film patterns on sidewalls of the wiring.

Thus, because Wang fails to teach these elements disclosed in the present invention, it cannot anticipate claim 17. As such, and for at least the reasons mentioned above, Applicant submits that claim 17 is in proper form for allowance and requests that the rejection under § 102(b) be removed.

Claims 18 and 20-23 depend from claim 17. Due at least in part on their dependency, Applicant submits that claims 18 and 20-23 are also in proper form for allowance.

Claim 25 is similarly rejected under § 102(b) as anticipated by Wang. Applicant submits that claim 25 discloses similar limitations to claim 17. In particular, the method of claim 25 includes forming a third insulating film on both the bit lines and the first insulating film, and etching the third insulating film and the first insulating film while simultaneously forming third insulating film patterns on sidewalls of the bit lines. With respect to claim 25,

Examiner asserts that the gate electrode in Wang (referenced in Wang Fig. 7 as 342) comprises bit lines in the same manner as the wiring disclosed in claim 17. The bit lines in claim 25 are not necessarily similar to the wiring disclosed in claim 17. Regardless, the method of forming a third insulating film on both the bit lines and the first insulating film, and etching the third insulating film and the first insulating film while simultaneously forming third insulating film patterns on sidewalls of the bit lines is sufficiently novel over the teachings of Wang for the reasons set forth above with respect to claim 17. Thus, for at least the reasons set forth above with respect to claim 17, Applicant submits that claim 25 is likewise in proper form for allowance.

Claims 26 and 28-31 depend from claim 25. Due at least in part on their dependency, Applicant submits that claims 26 and 28-31 are also in proper form for allowance.

Claim 39 is similarly rejected under § 102(b) as anticipated by Wang. This claim includes limitations similar to claim 17. In particular the method of claim 39 includes forming a third insulating film on both the patterned conductive layer and the first insulating film, and etching the third insulating film and the first insulating film concurrently with forming third insulating film patterns on sidewalls of the patterned conductive layer. With respect to claim 39, Examiner asserts that the gate electrode in Wang (referenced in Wang Fig. 7 as 342) comprises a patterned conductive layer in the same manner as the wiring disclosed in claim 17. The patterned conductive layer disclosed in claim 39 is not necessarily similar to the wiring disclosed in claim 17. Regardless, the method of forming a third insulating film on both the patterned conductive layer and the first insulating film, and etching the third insulating film and the first insulating film concurrently with forming third insulating film patterns on sidewalls of the patterned conductive layer is sufficiently novel over the teachings of Wang for the reasons set forth above with respect to claim 17. Thus, for at least the reasons set forth above with respect to claim 17, Applicant submits that claim 39 is likewise in proper form for allowance.

Claim 40 depends from claim 39. Due at least in part on its dependency, Applicant submits that claim 40 is also in proper form for allowance.

Allowable Subject Matter

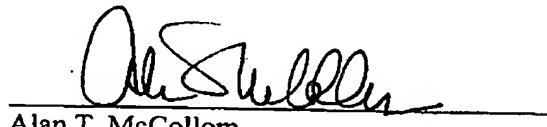
Claims 19, 27, 33-36 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant thanks Examiner for acknowledging the patentable subject matter of claims 19, 27, 33-36 and 41 by stating that they would be allowable if amended to include the limitations of the claims they depend from. However, because the independent claims, from which these claims depend from, are in proper form for allowance, as discussed above, claims 19, 27, 33-36 and 41 should now also be in proper form for allowance.

For the foregoing reasons, reconsideration and allowance of claims 17-36 and 39-41 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

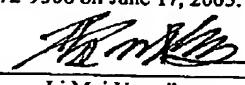
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